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10/662,772	09/15/2003	Ronald P. Doyle	RSW920030174US1	2183

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EXAMINER
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WAI, ERIC CHARLES

ART UNIT	PAPER NUMBER
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2195

NOTIFICATION DATE	DELIVERY MODE
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03/18/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOCommunications@hwdpatents.com

## Office Action Summary

Application No.

10/662,772

Applicant(s)

DOYLE ET AL.

Examiner

ERIC C. WAI

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Claims 1-20 are presented for examination.

#### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 11-16 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.
4. Claim 11 recites a "at least one computing device"; however, it appears that the computing device could be implemented in software and would reasonably be interpreted by one of ordinary skill in the art as software, per se, failing to be tangibly embodied or include any recited hardware as part of the system. While the specification provides support that the system includes both hardware and software, the claims stand on their own, and are read in light of their broadest reasonable interpretation.

#### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirschfeld et al. (US Pat No. 6,990,666 hereinafter Hirschfeld).

7. Regarding claim 1, Hirschfeld discloses a method of managing resources in a system, the method comprising:

determining a demand for a service (col 2 lines 43-61, wherein demand by users for a server providing a service is an important factor in allocation resources);

determining many attributes of the system (col 3 lines 1-13, wherein there are a variety of factors that are determined); and

provisioning a resource for the service based on the demand and the attribute (col 3 lines 54 to col 4 line 2, wherein usage of resources is optimized).

8. Hirschfeld differs from claimed invention by teaching using a variety of attributes to provision a resource. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to only utilize a demand and an attribute. One would be motivated by the desire to simplify the provisioning of a resource.

9. Regarding claim 2, Hirschfeld teaches that the attribute comprises a demand for at least one other service sharing the resources (col 3 lines 4-6, "incorporates dependencies and relationships between physical and logical resources").

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10. Regarding claim 3, Hirschfeld teaches that the resources comprise at least one software server (col 3 lines 36-37, virtualized logical server), and wherein the attribute comprises a software status of the at least one software server (col 3 lines 36-50, wherein the state of a server is incorporated into a cost).

11. Regarding claim 4, Hirschfeld teaches that the resources comprise at least one software server (col 3 lines 36-37, virtualized logical server), but does not explicitly teach that the attribute comprises a cache state of the at least one software server.

12. It would have been obvious to one of ordinary skill in the art at the time of the invention to include provisioning resources based on a cache state. One would be motivated by the desire for more efficient use of resources by reducing the necessity to replenish the cache with new data.

13. Regarding claim 5, Hirschfeld does not explicitly teach that the attribute comprises a time period required to provision at least one of the resources for the service.

14. Hirschfeld teaches using the cost to optimize usage of resources (col 4 lines 1-2). It would have been obvious to one of ordinary skill in the art at the time of the invention to factor in a time period required to provision a resource into the cost of doing so.

15. Regarding claim 6, Hirschfeld teaches that the attribute comprises a load on the image system (col 3 line 4, "usage").

16. Regarding claim 7, Hirschfeld teaches a method of managing resources in a system, the method comprising:

determining a first demand for a service in the system (col 2 lines 43-61, wherein demand by users for a server providing a service is an important factor in allocation resources);

determining a set of attributes of the system, wherein the set of attributes comprises: a load on an image server, a load on a network used by the image server and a software server, and a second demand for at least one other service sharing the system (col 3 lines 1-13, wherein there are a variety of factors that are determined); and

provisioning a resource for the service based on the first demand and the set of attributes (col 3 lines 54 to col 4 line 2, wherein usage of resources is optimized).

17. Hirschfeld differs from claimed invention by not explicitly teaching that the set of attributes comprises a load on an image server, a load on a network used by the image server and a software server, and a second demand for at least one other service sharing the system. It would have been obvious to one of ordinary skill in the art to modify Hirschfeld to teach that the set of attributes comprises the above. Hirschfeld teaches that “the resource definition incorporates information of available physical and logical resources of the server cloud, including cost, priority, usage, and demand information ... (col 3 lines 2-6). Therefore, Hirschfeld is not limited to the disclosed attributes.

18. Regarding claims 8-10, Hirschfeld teaches the method as claimed in claims 2-6.

19. Regarding claim 11-16, they are the system claims of claims 1-6 above.

Therefore, they are rejected for the same reasons as claims 1-6 above.

20. Regarding claim 17-20, they are the program product claims of claims 1-6 above.

Therefore, they are rejected for the same reasons as claims 1-6 above.

### ***Response to Arguments***

21. Applicant's arguments filed 01/02/2008 have been fully considered but they are not persuasive.

22. Applicant argues on pages 6-7:

“However, the Office apparently confuses demand for a server, which is a physical resource and is discussed in Hirschfeld, with demand for a service. As previously argued by Applicants, "service" is a term of art that refers to the functionality derived from a particular software program (see, e.g., service, TechEncyclopedia, The Computer Language Company, available at <http://www.techweb.com/encyclopedia/defineterm.jhtml?term=service> (accessed 17 July 2007)). Additionally, as previously argued by Applicants, a system, such as the server in Hirschfeld, can provide numerous services (as illustrated by claim 2), perform other functionality, and/or the like, each of which can impact the demand for a particular

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resource, such as the server in Hirschfeld. As a result, demand for the service does not necessarily directly correlate to the demand for the resource as implied by the Office.

Further, a particular service may not require a substantial amount of a particular resource. In this case, the resource may experience a low demand while the demand for the service is high.”

23. Examiner disagrees. Applicant agrees that Hirschfeld teaches determining demand for a resource such as a server. Examiner again asserts that demand for a service is equivalent and analogous to demand for a resource. Applicant’s provided definition is irrelevant since it is widely known in the art that a resource can also refer to functionality derived from a particular software program. It is inherent that demand for a resource involves demand for a service provided by that resource. Therefore, Applicant’s arguments that Hirschfeld does not read upon the claimed invention is not persuasive.

24. Applicant argues on page 7:

“Further, the Office fails to show that Hirschfeld teaches or suggests provisioning a resource for the service based on the demand and an attribute of a system as in claim 1. The Office acknowledges that Hirschfeld fails to teach using a demand for a service to provision a resource. Office Action, p. 3, paragraph 8. However, the Office alleges that “it would have been obvious... to only utilize a demand and a single attribute. One would be motivated by the desire to simplify the provisioning of a resource.” Id. In support of its Official Notice, the Office cites Hirschfeld, col. 2, lines 43-61, which



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discusses approaches for providing sufficient physical resources to meet the demand requirements of multiple logical (virtual) server implementations.”

25. Examiner disagrees. Hirschfeld teaches using demand and attributes to determine resource allocations (col 3 lines 2-13). Because of the open ended language used in the preamble of the claim (i.e. “comprising”), under the broadest reasonable interpretation, the claim language allows for multiple attributes to determine the provisioning of resources, such as taught by Hirschfeld. Furthermore, Official Notice was not taken in rejecting the claim.

26. Applicant argues on pages 7-8:

“Initially, Applicants submit that the Office improperly relies on the hindsight of Applicants' claimed invention in support of its Official Notice. In particular, Hirschfeld only discusses demand for one or more resources (e.g., a server) in provisioning resources. As a result, a person of ordinary skill in the art would not be motivated by the teachings of Hirschfeld to utilize a different type of demand, e.g., the demand for a service as in claim 1, which is not discussed in Hirschfeld. Further, since Hirschfeld is merely concerned with maximizing the utilization of physical resources underlying logical resources (see, e.g., Hirschfeld, col. 2, lines 55-61), a person of ordinary skill in the art would not be motivated by the teachings of Hirschfeld to look to a measure only tangentially related to the utilization of physical resources, namely, the demand for a service.”

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27. Examiner disagrees. As indicated above, Official Notice was not taken in this Office action. Furthermore, as argued above, demand for a resource implies demand for a service since resources provide services. No where in the Office Action has Examiner stated that “a person of ordinary skill in the art would not be motivated by the teachings of Hirschfeld to look to a measure only tangentially related to the utilization of physical resources, namely, the demand for a service”.

28. Applicant argues on page 8:

“Further, the Office fails to provide sufficient evidentiary support for its position that "utiliz[ing] a demand [for a service] and a single attribute..., would simplify the provisioning of a resource." Office Action, p. 3, paragraph 8. To the contrary, Hirschfeld, col. 2, lines 43-61 discusses demand for physical resources for a logical server and its corresponding logical resources, not demand for a service as implied by the Office. See, e.g., Hirschfeld, col. 2, lines 40-43; 55-57. To this extent, Hirschfeld discusses alternative approaches to meeting the demands of logical servers and their weaknesses. Namely, Hirschfeld discusses provisioning sufficient physical resources to support all authorized demands of the logical servers simultaneously (col. 2, lines 43-46), and designing a server system based on peak usage of the logical servers (col. 2, lines 49-55). In both cases, Hirschfeld is concerned about having sufficient physical resources to meet the requirements of the logical resources tied thereto, and not the demand of any type of service as in claim 1.”

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29. Examiner disagrees. Applicant's claim 1, under the broadest reasonable interpretation, allows for Hirschfeld to be used as art. Applicant appears to be relying on the definition that service can only refer to functionality derived from a particular software program (i.e. not a physical resource). However, service can also be defined as "a customer-based or user-oriented function, such as technical support or network provision" (Microsoft Computer Dictionary, Fifth Edition, 2002). Therefore, it is reasonable for demand for a service to be concerned with demand for a physical resource.

30. Applicant argues on pages 8-9:

"In light of the above, either alone or in combination, Applicants respectfully request withdrawal of the rejections of claim 1 and claims 2-6, which depend therefrom as allegedly being unpatentable over Hirschfeld. In the alternative, should the Office maintain its rejection, Applicants request that the Office further explain where Hirschfeld discusses demand for a service and not demand for physical resources. Additionally, Applicants request that the Office provide evidentiary support for its Official Notice that the teachings of Hirschfeld, without the benefit of the hindsight of Applicants' invention, teach or suggest that "utiliz[ing] a demand [for a service] and a single attribute..., would simplify the provisioning of a resource."

31. Examiner disagrees. As indicated above, demand for physical resources is equivalent to demand for a service. Furthermore, Examiner has not taken Official Notice as asserted by Applicant.

32. Applicant argues on page 9:

“With further respect to claim 2, the Office alleges that "information corresponding to dependencies and relationships between physical and logical resources" teaches "a demand for at least one other service sharing the resources" as in claim 2. Office Action, p. 3, paragraph 9. However, Applicants note that such information is entirely unrelated to demand for at least one other service as in claim 2. As a result, Applicants again respectfully request withdrawal of the rejection of claim 2 as allegedly being unpatentable over Hirschfeld. In the alternative, Applicants respectfully request that the Office further explain how information corresponding to dependencies and relationships between physical and logical resources allegedly teaches a demand for at least one other service sharing the resources.”

33. As argued above, demand for resources indicated a demand for service. Therefore, dependencies and relationships between physical and logical resources could indicate demand for other services that depend on the resource.

### ***Conclusion***

34. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

35. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric C. Wai whose telephone number is 571-270-1012. The examiner can normally be reached on Mon-Thurs, 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng - Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Meng-Ai An/

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Supervisory Patent Examiner, Art Unit 2195

/Eric C Wai/

Examiner, Art Unit 2195